

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First
Named
Inventor: Kyekyoon Kim

Serial No.: 10/728,190

Examiner: George, Konata M

Filing
Date: December 4, 2003

Group Art Unit: 1616

Title: MICROPARTICALS

Confirmation No.: 7314

INFORMATION DISCLOSURE STATEMENT

M.S. – Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with the provisions of 37 C.F.R. § 1.56, Applicants request that citation and examination of the references identified on the attached Form PTO-1449, required copies of which are enclosed herewith in accordance with 37 C.F.R. §1.98, be made during the course of examination of the above-referenced application for United States Letters Patent.

Please note that some of the references cited in this Information Disclosure Statement were previously cited in an earlier Information Disclosure Statement.

Since this Information Disclosure Statement is being submitted after the mailing of the first Office Action, payment of the fee set forth in 37C.F.R. §1.17(p) accompanies this submission.

- Payment by credit card.

Respectfully submitted,



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Form PTO-1449 (Rev. 8-88)	Attorney Docket No. ILL01-002-US	Serial No. 10/728,190
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	First Named Inventor: Kyekyoon Kim	
	Filing Date: December 4, 2003	Group: 1616

U.S. PATENT DOCUMENTS

Examiner Initials*		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	Z1	3,579,245	05/1971	Berry			
	Z2	4,358,528	10/1982	Coffee			
	Z3	4,444,961	04/1984	Timm			
	Z4	4,748,043	08/1988	Seaver et al.			
	Z5	4,881,827	08/1989	Mathiowitz et al.			
	Z6	5,019,400	05/1991	Gombotz, et al.			
	Z7	5,280,002	11/1993	Wang			
	Z8	5,340,090	08/1994	Orme et al.			
	Z9	5,344,676	09/1994	Kim et al.			
	Z10	5,445,686	08/1995	Peschka et al.			
	Z11	5,462,886	10/1995	Wang			
	Z12	5,650,173	07/22/97	Ramstack et al.			
	Z13	5,654,008	08/05/97	Herbert et al.			
	Z14	5,667,808	09/16/97	Johnson et al.			
	Z15	5,674,534	10/07/97	Zale et al.			
	Z16	5,711,968	01/27/98	Tracy et al.			
	Z17	5,716,644	02/10/98	Zale et al.			
	Z18	5,792,477	08/11/98	Rickey et al.			
	Z19	5,817,343	10/06/98	Burke			
	Z20	5,874,111	02/1999	Mailra, et al.			
	Z21	5,891,478	04/08/99	Johnson et al.			

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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U.S. PATENT DOCUMENTS

Examiner Initials*		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	Z22	5,912,015	06/15/99	Bernstein et al.			
	Z23	5,916,597	06/29/99	Lee et al.			
	Z24	5,916,596	06/29/99	Rickey et al.			
	Z25	5,922,253	07/13/99	Herbert et al.			
	Z26	5,948,483	09/19/99	Kim et al.			
	Z27	5,954,907	09/19/99	LaRose et al.			
	Z28	5,985,354	11/19/99	Mathiowitz et al.			
	Z29	5,989,463	11/23/99	Tracy et al.			
	Z30	6,051,259	04/18/00	Johnson et al.			
	Z31	6,060,128	05/20/00	Kim et al.			
	Z32	6,110,503	08/29/00	Rickey et al.			
	Z33	6,110,821	08/29/00	Mesens et al.			
	Z34	6,116,516	09/20/00	Ganan-Calvo			
	Z35	6,119,953	09/19/00	Ganan-Calvo et al.			
	Z36	6,153,129	11/28/00	Herbert et al.			
	Z37	6,174,469	01/16/01	Ganan-Calvo			
	Z38	6,183,781	02/06/01	Burke			
	Z39	6,187,214	02/13/01	Ganan-Calvo			
	Z40	6,189,803	02/20/01	Ganan-Calvo			
	Z41	6,194,005	02/27/01	Lyons et al.			
	Z42	6,196,525	03/06/01	Ganan-Calvo			
	Z43	6,197,835 B1	03/20/01	Ganan-Calvo			

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Examiner Initials*		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	Z44	6,197,835	03/05/01	Ganan-Calvo			
	Z45	6,224,794	05/01/01	Amsden et al.			
	Z46	6,302,331	10/2001	Dvorsky et al.			
	Z47	6,447,752	09/2002	Edwards et al.			
	Z48	6,447,753	09/2002	Edwards et al.			
	Z49	6,458,387	10/2002	Scott et al.			
	Z50	6,669,961	12/2003	Kim et al.			
	Z51	2002/0054912	05/2002	Kim et al.			
	Z52	2002/0160109	10/2002	Yeo et al.			
	Z53	2004/0022939	02/2004	Kim et al.			
	Z54	2004/0079360	04/2004	Coffee et al.			

FOREIGN PATENT DOCUMENTS

Examiner Initials*		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	Y1	CA 2,419,115	02/2002	Canada				
	Y2	CH 675 370 A5	09/1990	Switzerland				
	Y3	DE 27 25 849 A1	12/1978	DE				
	Y4	EP 0 258 016 A	03/1988	EP				
	Y5	EP 0 265 924 A2	04/1988	EP				
	Y6	WO 02/13786	02/2002	WO				
	Y7	WO 2005/055968	08/2006	WO				
	Y8	WO 2006/057766A1	06/2006	WO				
	Y9	WO 97/31691	04/1997	WO				

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FOREIGN PATENT DOCUMENTS

Examiner Initials*		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	Y10	WO 98/58745	12/1998	WO				
	Y11	WO 99/44735	10/1999	WO				

Examiner Initials*		OTHER ITEMS - NON PATENT LITERATURE DOCUMENTS	
		Include, as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages	
	X1	Aldrich, "Microparticle Size Standards," Aldrich Technical Bulletin, AL-203, pp. 1-2, 1997.	
	X2	Amsden, B., "The production of uniformly sized polymer microspheres," Pharm. Res. 16, 1140-1143, 1999.	
	X3	Amsden, B.G. et al., "An examination of factors affecting the size, distribution, and release characteristics of polymer microbeads made using electrostatics," J. Controlled Rel. 43, 183-196, 1997.	
	X4	Banerjee, T., et al., "Preparation, characterization and biodistribution of ultrafine chitosan nanoparticles," Int. J. Pharm. 243, 93-105, 2002.	
	X5	Barkland, C. et al., "Fabrication of PLG microspheres with precisely controlled and monodisperse size distributions," Journal of Controlled Release, vol. 73, pp. 59-74, May 18, 2001.	
	X7	Barkland, C., et al., "Precise control of PLG microsphere size provides enhanced control of drug release rate," Journal of Controlled Release, vol. 82, pp. 137-147, 2002.	
	X8	Barkland, et al., "Controlled Release from Uniform Two-Polymer Microcapsules", Proceedings of the International Symposium on Controlled Release of Bioactive Materials, vol. 30, pp. 350, (2003).	
	X10	Bittner, B. et al., "Ultrasonic Atomization for Spray Drying: A Versatile Technique For the Preparation of Protein Loaded Biodegradable Microspheres," Journal of Microencapsulation, Vol. 16:3, p. 325-341, 1999.	
	X11	Brandau, T., "Preparation of monodisperse controlled release microcapsules," Int. J. Pharm. 242: 179-184, 2002.	
	X12	Crotts, G. et al., "Preparation of porous and nonporous biodegradable polymeric hollow microspheres," J. Controlled Rel. 35, 91-105, 1995.	
	X13	Foster, C.A., et al., "Apparatus for producing uniform solid spheres of hydrogen," Rev. Sci. Instrum., vol. 48, no. 6, pp. 625-631, 1977.	
	X14	Gilliard, R.P., et al., "Spherical hydrogen pellet generator for magnetic confinement fusion research," Rev. Sci. Instrum., vol. 52, no. 2, pp. 183-190, 1981.	
	X15	Guttman, C.D. et al., "An investigation of the effects of system parameters on the production of hollow hydrogen droplets," J. Appl. Phys., vol. 50, no. 6, pp. 4139-4142, June 1979.	
	X16	He, P., et al., "Chitosan microspheres prepared by spray drying," Int. J. Pharm. 187, 53-65, 1999.	
	X17	Hendricks, C.D., et al., "Interaction of a stream of dielectric spheres in an electric field in a high vacuum," IEEE Trans. Ind. Appl., vol. 1a-21, no. 3, pp. 705-708, 1985.	
	X18	Huang, Y., et al., "Formulation factors in preparing BTM-chitosan microspheres by spray drying method," Int. J. Pharm. 242, 239-242, 2002.	

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Examiner Initials*		OTHER ITEMS - NON PATENT LITERATURE DOCUMENTS Include, as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
	X19	International Search Report dated March 16, 2006 for PCT application number PCT/US2004/040195.
	X20	Jang, K.Y. et al., "Evaluation of sol-gel processing as a method for fabricating spherical-shell silica aerogel ICF targets," J. Vac. Technol. A, vol. 10, no. 4, pp. 1152-1157, 1992.
	X21	Jang, K.Y. et al., "Study of sol-gel processing for fabrication of hollow silica-aerogel spheres," J. Vac. Sci. Technol. A, 8:3, pp. 1732-1735, 1990.
	X22	Kim, K. et al., "Generation of charged drops of insulating liquids by electrostatic spraying," J. Appl. Phys., vol. 47, no. 5, pp. 1964-1969, May 1976.
	X23	Kim, K. et al., "Hollow silica spheres of controlled size and porosity by sol-gel processing," J. Am. Ceram. Soc., 74:8, pp. 1987-1992, 1991.
	X24	Kim, K., "Fabrication of glass micro- and nanospheres from liquid precursors using droplet generation and sol-gel processing," Mat. Res. Soc. Symp. Proc., vol. 372, pp. 25-32, 1995.
	X25	Kim, K., et al., "Fabrication of hollow silica aerogel spheres by a droplet generation method and sol-gel processing," J. Vac. Sci. Technol. A, vol. 7, no. 3, pp. 1181-1184, 1989.
	X26	Kirwan, J.E., et al., "An experimental and theoretical study of a monodisperse spray," AIAA J. Propulsion and Power, vol. 4, no. 4, pp. 299-307, 1988.
	X27	Ko, J., et al., "Preparation and characterization of chitosan microparticles intended for controlled drug delivery," Int. J. Pharm. 249, 165-174, 2002.
	X28	Koizumi, Mekoto, et al., "Allosteric selection of ribozymes that respond to the second messengers cGMP and cAMP," Nature Structural Biology, Vol. 6, pp. 1062-1071, 1999.
	X29	Leech, K.J., et al., "Degradation of double-walled polymer microspheres of PLLA and P(CPP-SA) 20:80. I. In vitro degradation," 1973-1980, 1998.
	X30	Leach, K.L., et al., "Degradation of double-walled polymer microspheres of PLLA and P(CPP-SA) 20:80 II. In vivo degradation," Biomaterials, 19:1981-1988, 1998.
	X31	Lee, T.H., et al., "Double-walled microspheres for the sustained release of a highly water soluble drug: characterization and irradiation studies," J. Controlled Release, 83:437-452, 2002.
	X32	Leelarasamee, N. et al., "A method for the preparation of poly(lactic acid) microcapsules of controlled particle size and drug loading," Journal of Microencapsulation 5, 147-157, 1988.
	X33	Loscertales, I.G., et al., "Micro-nano encapsulation via electrified coaxial liquid jets," Science, 295, pp. 1695-1698, (2002).
	X34	Mok, L.S. et al., "Equilibrium of a liquid in a spherical shell due to gravity, surface tension, and van der Waals forces," Phys. Fluids, vol. 28, no. 5, pp. 1227-1232, May 1985.
	X35	Roydeman, L. et al., "Electrostatic spraying and its use in drug delivery - cholesterol microspheres," Int. J. Pharm. 124, 75-85, 1995.
	X37	Sanchez, A. et al., "Pulsed controlled-release system for potential use in vaccine delivery," Pharm. Sci. 85, 547-552, 1996.
	X38	Sansdrap, P. et al., "Influence of manufacturing parameters on the size characteristics and the release profiles of nifedipine from poly(DL-lactide-co-glycolide) microspheres," Int. J. Pharm. 98, 157-164, 1993.
	X39	Santorio, Stephen, et al., "A general purpose RNA-cleaving DNA enzymes," Proceedings of National Academy of Science, Vol. 94, pp. 4262-4266, 1997.
	X40	Shi, M., et al., "Double walled POE/PLGA microspheres: encapsulation of water-soluble and water-insoluble proteins and their release properties," J. Controlled Release, 89:167-177, 2003.

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	X41	Shiga, K. N. Muramatsu et al., "Preparation of poly(D,L-lactide) and copoly(lactide-glycolide) microspheres of uniform size," J. Pharm., Pharmacol 48, 891-895, 1996.
	X42	Skoog, D., et al., from Fundamentals of Analytical Chemistry, fourth edition, Section 3C-2, 51-53, 1982
	X43	Tracy, M.A., "Development and scale-up of a microsphere protein delivery system," Biotechnol. Prog. 14, 108-115, 1998.
	X44	Yang, Y., et al., "POE/PLGA composita microspheres: formation and in vitro behavior of double walled microspheres," J. Controlled Release 88:201-213, 2003.
	X45	You, J. et al., "Preparation of regular sized ca-alginate microspheres using membrane emulsification method," Journal of Microencapsulation, vol. 18, no. 4, pp. 521-532, 2001.
	X46	International Search Report dated January 30, 2003 for PCT application number PCT/US2001/25674.
	X47	Utada, A. S., et al., "Monodispersa double emulsions generated from a microcapillary device", Science, vol. 308, pp. 537-541, (2005).
	X48	Groenendaal, L., et al., "Poly(3,4-ethylenedioxythiophene) and its derivatives: Past, Present, and Future", Advanced Materials, vol. 12, no. 7, pp. 481-494, (2000).
	X49	Schrauwers, A., "Focused spraying: Fighting plant disease without making a mess", Delft Outlook, pp. 1, 6-16, located at http://www.delftoutlook.tudelft.nl/info/index.cfm?hoofdstuk=article&ArtID=5558 , (2003).
	X50	International Search Report dated April 6, 2006 for PCT application number PCT/US2005/038995.

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